

REMARKS

This Amendment is respectfully submitted to place rejected claims of subject Application in condition for allowance. Claim 1 has been amended to recite "sulfur and nitrogen containing" as suggested by Examiner Singh.

- 5 New Claims 13 and 14 have been added, and Claim 1 has been further amended to more clearly point out the patentable subject matter of Applicants novel invention.

- 10 In particular, Claim 1 has been amended to recite Applicants' novel process for reducing the sulfur and nitrogen content of a distillate feedstock to produce refinery transportation fuel or blending components for refinery transportation fuel wherein the feedstock contains heteroaromatic sulfur-containing and nitrogen-containing organic impurities which process comprises: Contacting the feedstock with an oxygen-containing gas in an oxidation zone at oxidation conditions in the presence of an oxidation
- 15 catalyst comprising at least one active Group VIII metal present in an amount ranging from about 4 percent to about 50 percent based on the total catalyst weight selected from the group consisting of the *d*-transition elements in the Periodic Table having atomic number from 21 to 30 inclusive, and a basic support selected from the group consisting of alkali
- 20 oxides and alkaline earth oxides to convert the sulfur and nitrogen-containing organic impurities to oxidized sulfur and nitrogen-containing compounds; and Separating a portion of the oxidized sulfur and nitrogen-containing compounds from the oxidation zone effluent as by distillation to a cut point temperature by which 90 percent of the sulfur-containing
- 25 compounds in the feedstock would boil and thereby recover a distillate effluent having a reduced amount of the oxidized sulfur and nitrogen-containing compounds and a TAN number of less than about 2.0 mg KOH/g.

- Support for amended Claim 1 is found in the Specification, for example at page 14, lines 10 to 17, page 16, lines 23 to 31, and page 17, lines
- 30 23 to 28.

New Claim 13 recites the process of claim 1 wherein the Group VIII metal is present in an amount ranging from about 4 percent to about 12 percent based on the total catalyst weight. New Claim 14 recites the process of claim 13 wherein the Group VIII metal is cobalt and the basic support is member of the group consisting of magnesium oxide and calcium oxide.

Support for Claims 13 and 14 is found in the Specification, for example at page 16, lines 23 to 31, and original Claims 9 and 10.

Claim Rejections under Nonstatutory Double Patenting:

10 Applicants note with appreciation that the terminal disclaimer filed on 08/17/06 has been recorded thereby obviating the provisionally rejections under the judicially created doctrine of obviousness-type double patenting.

Claim Rejections under 35 U.S.C. § 103(a)

15 In outstanding Office Action, Claims 1, 11, and 12 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Marcilly et al. (USP 5,591,323). Applicants respectfully traverse these rejections.

20 The Marcilly et al. reference of record describes a treatment of a petroleum cut containing mercaptans using porous catalyst obtained by incorporating an alkaline ion (sodium ion, potassium ion) into a mixed oxide structure which is essentially constituted of aluminum oxides and silicon oxides combined. (first paragraph under Summary of the Invention). These alkaline aluminosilicates supports are said to be closely linked to a metal chelate present in from 0.02 percent to 2.0 percent by weight.

25 It should be noted that the catalytic process described in the reference of record is only reported to be useful for the oxidation of mercaptans to disulfides, which thereafter may be separated by transfer into an aqueous medium. In contrast, Applicants' oxidation has been shown to convert nitrogen compounds and aromatic sulfur-containing compounds (such as hindered thiophenes and benzothiophenes) to higher boiling, more polar

oxidized compounds. Indeed, the examples of the present specification demonstrate that Applicants' novel catalytic process is useful in reducing the sulfur and nitrogen content of a feedstock which is free of mercaptans (such as effluent from hydro-desulfurization of a petroleum distillate)
5 Furthermore, the examples in the reference of record (see table 2 to 5, pages 17 to 19) only report the residual mercaptan content of the treated distillates. There is no teaching that the content of other sulfur (or nitrogen) compounds in the distillate may be reduced by the procedure disclosed in the Marcilly et al. reference.

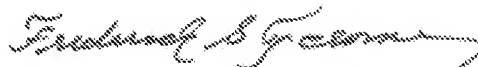
10 It is the position of Applicants that the Marcilly et al. reference of record does not suggest the essence of their novel multi-step process as recited according to instant Claims 1, 2 and 9 to 14.

Base on the amendments submitted herein, Applicants urge that Claims 1, 2 and 9 to 14, inclusive, all claims now presented, are in condition
15 for allowance. Applicants respectfully request Examiner Singh to pass subject application for allowance.

Do not hesitate to contact Frederick S. Jerome whose telephone number is (630) 832-7974 (FAX (630) 832-7976) if additional assistance is needed regarding this paper or earlier papers for Applicants.

20 Applicants and their undersigned Attorney appreciate Examiner's attention and further consideration of this matter.

Respectfully submitted,



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